

In the Claims:

Please amend claims 1 and 3 as set forth below in the “Listing of Claims”.

LISTING OF CLAIMS

Claim 1 (Currently Amended): A coating method for forming a coating film of ceramic material on a surface of a an internal member disposed in a vacuum processing apparatus, the internal member having holes formed on the surface, the method comprising:

a step (A) of filling the holes of the internal member with padding plugs each of which has a core member made from a metal material and a metal-resin composite layer covering the circumferential surface of the core member, the metal-resin composite layer being a complex consisting of a metal material and a resinous material exhibiting nonconjugative property to the coating film;

a step (B) of forming a ceramic coating film on the surface of the internal member by means of plasma spraying after the step (A); and

a step (C) of extracting the padding plugs out of the holes of the internal member after the step (B).

Claim 2 (Original): A coating method according to claim 1, wherein the surface of the internal member having holes is composed of a material selected from a group of aluminum and aluminum base alloys; each of the holes has an inner diameter ranging from 0.3 mm to 5.0 mm; the core member of the padding plug is formed by a steel wire; the metal-resin composite layer of the padding plug is composed of an electroless nickel plating layer ranging from 10 to 50 μm in thickness and having fluoropolymer particles dispersed therein; the coating film is composed of a material selected from a group of Al_2O_3 , AlN , TiO_2 and Y_2O_3 ; and at the step (A), the padding plugs are fitted in the holes so as to project from the surface of the internal member by 1 mm to 3 mm.

Claim 3 (Currently Amended): A coating method for forming a first coating film providing an insulating layer and a second coating film providing an electrode layer

embedded in the insulating layer on a base part of an electrostatic chuck as a an internal member disposed in a vacuum processing apparatus and having gas injection holes formed on the surface thereof, the method comprising:

a step (D) of forming a first insulating layer composed of a coating film of Al_2O_3 on the surface of the base part of the electrostatic chuck by using the coating method as defined in claim 1;

a step (E) including: a series of: a process (a) of filling the gas injection holes of the base part with padding plugs made of a metal material; a process (b) of forming a tungsten coating film on the surface of the first insulating layer by means of plasma spraying after the process (a); and a process (c) of extracting the padding plugs out of the gas injection holes of the base part of the electrostatic chuck after the process (b); and forming the electrode layer arranged on the first insulating layer; and

a step (F) of forming a second insulating layer composed of a coating film of Al_2O_3 on the surface of the electrode layer by using the coating method as defined in claim 1.

Claim 4 (Original): A coating method according to claim 3, wherein the surface of the internal member having holes is composed of a material selected from a group of aluminum and aluminum base alloys; each of the holes has an inner diameter ranging from 0.3 mm to 5.0 mm; the core member of the padding plug is formed by a steel wire; the metal-resin composite layer of the padding plug is composed of an electroless nickel plating layer ranging from 10 to 50 μm in thickness and having fluoropolymer particles dispersed therein; the coating film is composed of a material selected from a group of Al_2O_3 , AlN , TiO_2 and Y_2O_3 ; and at the step (A), the padding plugs are fitted in the holes so as to project from the surface of the internal member by 1 mm to 3 mm.

Claim 5 (Withdrawn): A internal member having holes manufactured by using the coating method as defined in claim 1.

Claim 6 (Withdrawn): A internal member having holes according to claim 5, wherein the surface of the internal member having holes is composed of a material

selected from a group of aluminum and aluminum base alloys; each of the holes has an inner diameter ranging from 0.3 mm to 5.0 mm; the core member of the padding plug is formed by a steel wire; the metal-resin composite layer of the padding plug is composed of an electroless nickel plating layer ranging from 10 to 50 μm in thickness and having fluoropolymer particles dispersed therein; the coating film is composed of a material selected from a group of Al_2O_3 , AlN , TiO_2 and Y_2O_3 ; and at the step (A), the padding plugs are fitted in the holes so as to project from the surface of the internal member by 1 mm to 3 mm.

Claim 7 (Withdrawn): An electrostatic chuck manufactured by using the coating method as defined in claim 3.

Claim 8 (Withdrawn): An electrostatic chuck according to claim 7, wherein the surface of the internal member having holes is composed of a material selected from a group of aluminum and aluminum base alloys; each of the holes has an inner diameter ranging from 0.3 mm to 5.0 mm; the core member of the padding plug is formed by a steel wire; the metal-resin composite layer of the padding plug is composed of an electroless nickel plating layer ranging from 10 to 50 μm in thickness and having fluoropolymer particles dispersed therein; the coating film is composed of a material selected from a group of Al_2O_3 , AlN , TiO_2 and Y_2O_3 ; and at the step (A), the padding plugs are fitted in the holes so as to project from the surface of the internal member by 1 mm to 3 mm.